

# DW-SRF 2010 Project

Proposal for Green Project Reserve Methodology using format from EPA's • June 22, 2009 guidance for GPR business cases

## ESTIMATE OF VALUE OF WATER LOSS WORKSHEET

1 Date:	19-Jul-10
2 PWSID #	ME0090830
3 System	<b>LEWISTON WATER DIVISION</b>
4 Project Name	Main Replacement and Cleaning & Cement Lining Project
5 Location	Lewiston
6 Engineering Consultant	In-House
7 Existing Main size, age, and type	varies - see below summary
8 Proposed New Water Main size and type	varies - see below summary
9 New Main Pipe Length	varies - see below summary
10 Estimated Project Cost	\$ 945,000

Note: Data from Utilities Annual Report (2008) to Maine Public Utilities Commission

Page	Line	Description	Units	2008
W-12	15	Total Production Water	gallons per year	1,624,121,000
W-12	17	Total Revenue Water	gallons per year	995,063,000
W-12	19	Total Non-Revenue Water	gallons per year	629,058,000
W-12	19	Percent Non-Revenue Water		39%
W-12	22	Utility Usage - treatment	gallons per year	32,816,000
W-12	23	Utility Usage - hydrant flushing	gallons per year	65,349,000
W-12	14	Utility Usage - bleeders	gallons per year	410,870,000
W-12	26	Utility Usage - all other (running customers & blow-offs)	gallons per year	46,400,000
W-12	30	Fire Protection	gallons per year	48,560,000
W-12	31	Main Breaks	gallons per year	22,798,000
W-12	35	Flushing Mains	gallons per year	-
W-12	36	Total Accounted for Non-Revenue Water	gallons per year	626,793,000
W-12	37	Total Unaccounted Non-Revenue Water	gallons per year	2,265,000
		<b>Estimated Water Loss From ALL Breaks, Leaks, &amp; Bleeders</b>	<b>gallons per year</b>	<b>276,898,000</b>
		<i>(PUC Accounts total of lines 14, 26,31,35 and 37)</i>		
		<b>% of Water Loss of Total Production Water</b>		<b>17%</b>
		<i>(PUC Lines 14,26,31,35,37 divided by Line 15)</i>		
W-9	9	Total Transmission Mains	feet	24,760
W-9	23	Total Distribution Mains	feet	883,288
		Total Mains in Service	feet	908,048
			miles	172
		<u>Estimated Distribution System Losses:</u>		
		Loss Water per mile of pipe	gallons per mile per year	1,610,071
		Loss Water per foot of pipe per year	gallons per foot per year	305
		Loss water per foot of pipe per day	gallons per foot per day	0.84
		<u>Water loss will vary with age of water main - assume Straight line projection as follows:</u>		
		0 to 25 year old pipe	0 % of Total Loss	gallons per mile per year -
		26 to 50 year old pipe	10% of Total Loss	gallons per mile per year 161,007
		51 to 75 year old pipe	30% of Total Loss	gallons per mile per year 483,021
		over 75 year old pipe	60% of Total Loss	gallons per mile per year 966,042
			All Loses:	1,610,071
		Age of Main to be replaced	years	100
		Length of Main to be Replaced	mile	2.6
		<b>CALCULATED WATER LOSS - FOR PROPOSED PROJECT</b>	<b>gallons per year</b>	<b>2,517,565</b>
W-2	29c	<b>Total PRODUCTION COST of Water</b>	<b>\$/year</b>	<b>\$ 1,790,608</b>
W-12	15	Total Production Water	1,000 gallons per year	1,624,121
		<b>Production Cost of Water</b>	<b>per 1,000 gallons</b>	<b>\$ 1.10</b>
		<b>PROJECTED ANNUAL VALUE of WATER LOSS</b>	<b>per year</b>	<b>\$ 2,776</b>

Annual Savings	\$	2,776
PV Factor ( uniform series present worth factor (1%, 75 years):	\$	52.587
<b>Present Value of Savings over Economic life of pipeline:</b>	<b>\$</b>	<b>145,962</b>
<b>Project Cost</b>	<b>\$</b>	<b>945,000</b>
PV Percent of Project Cost:		15.4%

<b>ESTIMATED % Green</b>	<b>15.4%</b>
<b>\$ Amount Green</b>	<b>\$ 145,962</b>

PROJECT SUMMARY	
Clean & Cement Line 6"	6,128
Clean & Cement Line 8"	1,483
Clean & Cement Line 10"	522
Clean & Cement Line 12"	1,504
Clean & Cement Line 16"	1,033
<b>TOTAL CLEAN &amp; LINE:</b>	<b>10,670</b> 78%
New 8" DIP	1,750
New 12" DIP	740
New 16" DIP	600
<b>TOTAL REPLACEMENT MAINS</b>	<b>3,090</b> 22%